Name and brief description of program:
NCI Integrative Cancer Biology Program (ICBP)

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Program Description: The goal of NCI's Integrative Cancer Biology Program (ICBP) is to promote the analysis of cancer as a complex biological system, by supporting the development of reliably predictive in silico or computational models of cancer initiation and progression. These models will ultimately lead to the development of improved cancer interventions. The overall thrust of this program is the integration of experimental and computational approaches towards the understanding of cancer biology.

NCI recognizes that biomedical research is entering an era in which computational approaches are increasingly used to deepen our understanding of biological behavior. By building on mechanistic descriptions of individual biological constituents, there is a greater emphasis on concepts and methods that target systems and their integrated behavior and an increasing dependence of cancer biologists on expertise from computational sciences as well as other fields of science that consider complex systems.

Currently nine centers (six full centers and three planning centers) form the core of the program. The centers span basic and clinical interests, a wide range of biological and temporal scales, and a wide range of modeling approaches. In addition to developing computational models of cancer processes, these centers are also establishing training and outreach programs, in order to further develop the field by active knowledge dissemination and through educating future investigators in the necessary approaches and skills.

Resources and Tools Available for Sharing:
A central focus of the program is the sharing of the models as well as the software tools and biological information developed in the process of model building. Currently data and software are available in a variety of databases and on individual centers' websites. We are in the process of developing a yellow pages style list of the ICBP resources available. The models themselves will ultimately be made available to the research community. The program is working through a variety of methods to make the models available, including the development of a digital model repository.